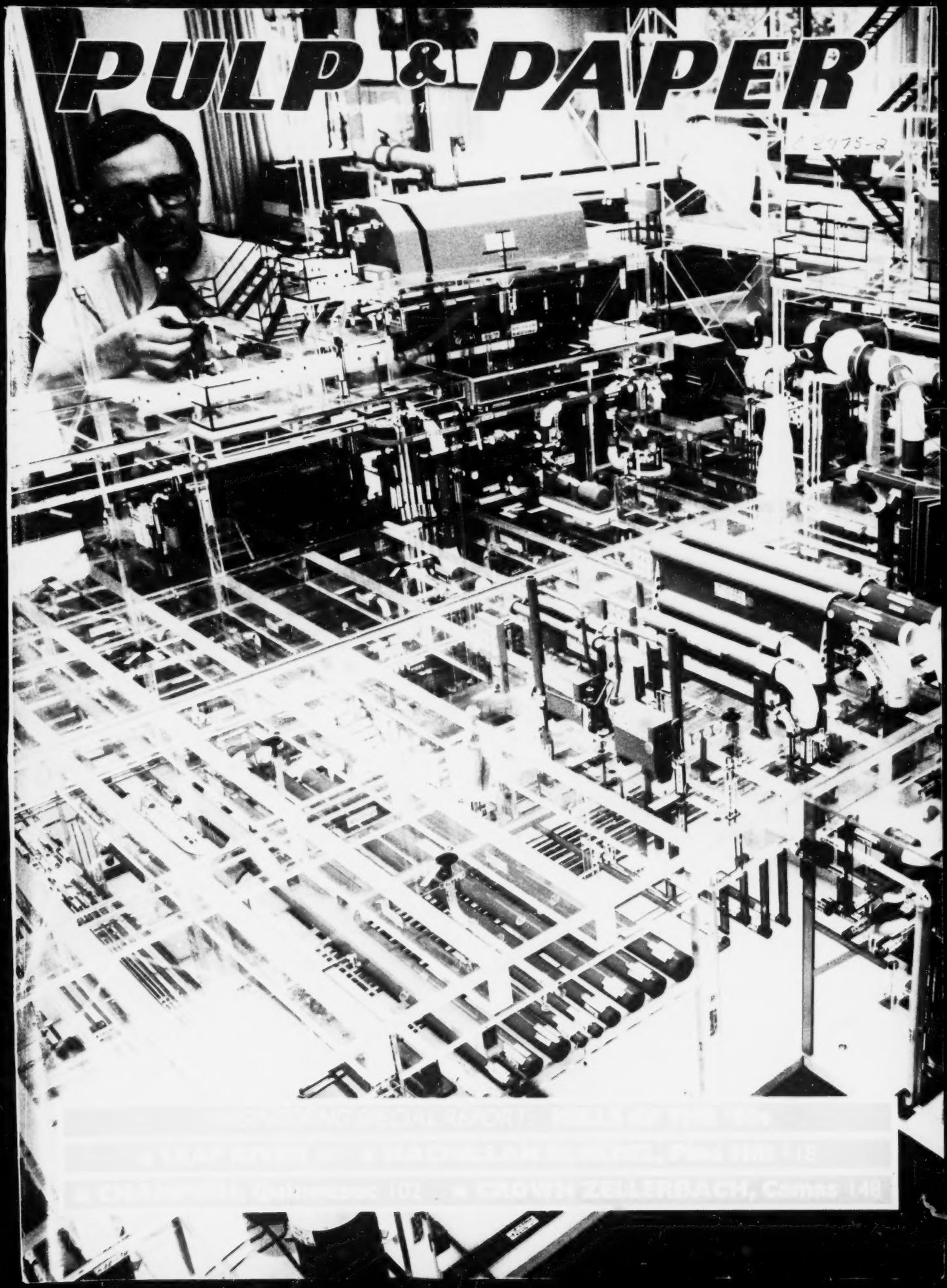
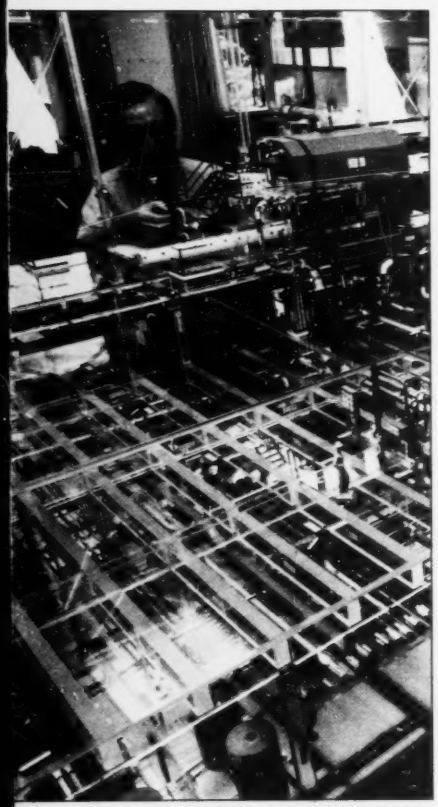
# PULP & PAPER



# PULP&PAPER

Volume 58 Number 9 September 1984

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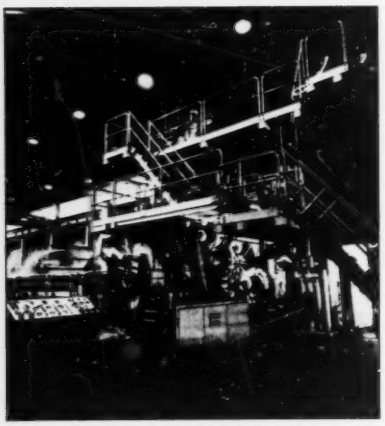

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***COVER:*** *This model by Rust Engineering—only one of several models commissioned by Crown Zellerbach at a cost of over $1 million to facilitate its Camas modernization project—exemplifies the state-of-the-art approach typical of "Mills of the '80s." (Photo courtesy of Crown Zellerbach.)*

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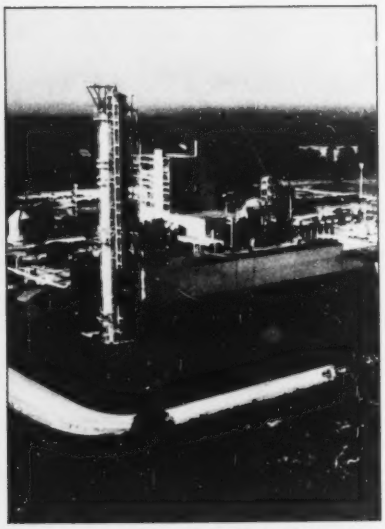

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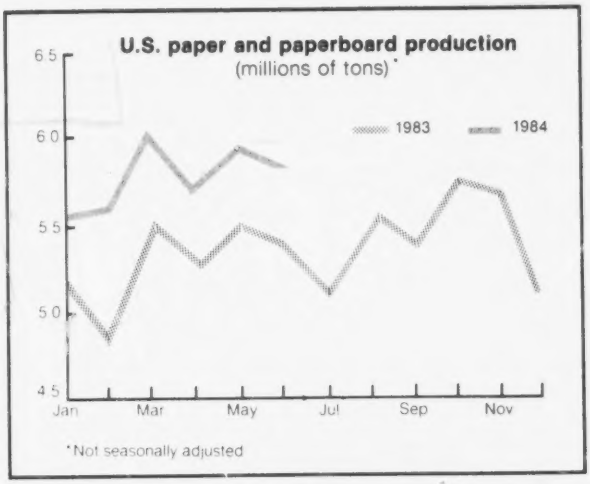
**U.S. paper and paperboard** production continued at close to capacity levels up until the start of the July vacation period, according to the American Paper Institute. Production in the first half of 1984 was a record 35 million tons, 9% above the level of the same 1983 period, which was also a record. With seasonal adjustment, the rate of production in the first six months of 1984 was 68.4 million tpy, 5% over the average rate for the full year of 1983. New capacity coming onsteam in the second half of the year—mostly in the printing/writing grades and particularly uncoated free sheet—will permit additional increases in production.

**Among major grades**, production of paperboard in the first half was 10% above the year-ago level, with production of containerboard for domestic use up almost 13% and boxboard production for domestic use up 8%.

**Canadian newsprint shipments** rose 9.7% in June compared with June 1983 and up 9% in the January-June period compared with the same 1983 period. Operating rates in June were 98%, up from 93% in the previous year.




| | | Latest month (000 short tons) | % change from year ago | Annualized year-to-date (000 short tons) | % change from year ago |
|---|---|---|---|---|---|
| **PAPER & PAPERBOARD PRODUCTION**[1] | | | | | |
| Newsprint | June | 468 | 14.1 | 5,606 | 9.5 |
| Uncoated groundwood (s) | June | 143 | 13.5 | 1,624 | 9.3 |
| Coated paper (s) | June | 518 | 11.9 | 6,251 | 15.7 |
| Uncoated free sheet (s) | June | 750 | 3.7 | 9,327 | 6.9 |
| Unbleached kraft packaging and industrial (s) | June | 316 | 1.9 | 3,951 | 6.2 |
| Tissue | June | 406 | 0.5 | 4,882 | 2.8 |
| **Total paper** | **June** | **2,881** | **6.3** | **35,131** | **8.5** |
| Kraft linerboard, unbleached | June | 1,389 | 12.4 | 16,259 | 10.1 |
| Semichemical medium | June | 443 | 11.9 | 5,197 | 12.1 |
| Bleached paperboard | June | 343 | 5.2 | 4,116 | 4.1 |
| Recycled paperboard | June | 673 | 9.4 | 8,209 | 12.2 |
| **Total paperboard** | **June** | **2,856** | **6.8** | **33,993** | **9.4** |
| **Total paper and paperboard**[5] | **June** | **5,837** | **8.4** | **70,109** | **8.2** |
| **PULP, WASTEPAPER & FIBER**[2] | | | | | |
| Total woodpulp production | May | 4,769 | 5.5 | 56,164 | 8.0 |
| Market pulp production | May | 560 | 3.9 | 6,813 | 5.7 |
| Wastepaper consumption at paper/board mills | May | 1,389 | 13.8 | 16,005 | 11.3 |
| Pulpwood consumption (cords) | May | 7,439 | 11.1 | 88,615 | 4.6 |
| **CONVERTED PRODUCTS STATISTICS**[3] | | | | | |
| Corrugated box shipments (billion ft²) | June | 22.387 | 1.7 | 135.051[6] | 9.0 |
| Containerboard inventories at box plants | June | 2,541 | 3.2 | | |
| **INTERNATIONAL TRADE**[2] | | | | | |
| U.S. paper imports (including products) | May | 929 | 24.5 | 10,465 | 25.5 |
| Imports of Canadian newsprint | May | 616 | 3.2 | 7,247[6] | 11.4 |
| U.S. paper exports (including products) | May | 430 | 3.6 | 4,458 | −1.5 |
| Exports of unbleached kraft linerboard | June | 178 | 4.8 | 2,085 | −10.9 |
| Exports of woodpulp | May | 336 | −11.1 | 3,687 | 2.8 |
| **CANADIAN STATISTICS**[4] (reported in metric tons) | | | | | |
| Total newsprint shipments | June | 872 | 9.7 | 4,441[6] | 9.0 |
| Operating rates | June | 97% | 88% | 89% | 83% |
| Inventories held by U.S. consumers | June 30 | 1.4 | 11.3 | | |
| Woodpulp shipments (export only) | June | 614 | −6.3 | 3,166[6] | 1.9 |
| Operating rates | June | 98% | 93% | 81% | 83% |

1. American Paper Institute. 2. API, Bureau of Census, American Pulpwood Assn. 3. Fiber Box Assn., Paperboard Packaging Council. 4. Canadian Pulp & Paper Assn. 5. Includes construction and wet machine grades. 6. Not annualized. 7. Not directly comparable to year ago because of coding change. (s) = shipments.

# Uncoated groundwood paper: good times ahead

| Statistics: | 1982 | 1983 | 1984e |
|---|---|---|---|
| Production, 000 tons[1] | 7,847 | 8,680 | 9,040 |
| Capacity, 000 tons | 9,039 | 9,179 | 9,554 |
| Utilization rate, % | 86.8 | 94.6 | 94.6 |
| Imports, 000 tons | 169 | 220 | 210 |
| Exports, 000 tons | 71 | 60 | 60 |
| Apparent U.S. consumption | | | |
| 000 tons | 7,945 | 8,840 | 9,190 |
| lb/capita | 68.7 | 75.7 | 78.0 |
| 000 tons/$ billion real GNP (1972) | 5.35 | 5.75 | 5.75 |

1. American Paper Institute data for shipment.
e = *Pulp & Paper* estimate.

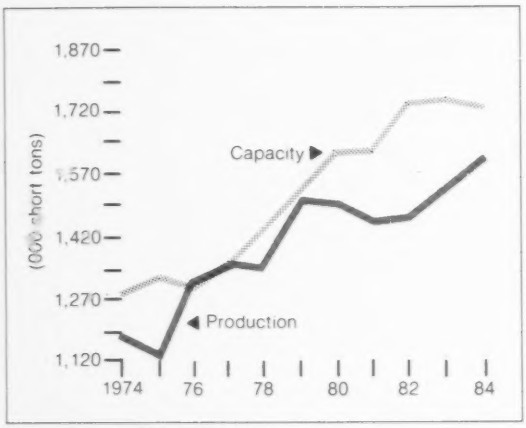
**GRADE STRUCTURE:** Uncoated groundwood paper is similar to newsprint in terms of physical properties. The two grades constitute the low-cost end of the printing paper spectrum. Uncoated groundwood paper has greater endurance and higher brightness—typically 64 to 72 Elrepho compared with 56 to 62 for newsprint. Typical end uses include Sunday supplements, magazines, directories, catalogs, inserts and other advertising circulars, and forms paper. Basis weight range is 20 lb to 45 lb/3,300 ft².

**PRODUCTION/CAPACITY:** In 1982 U.S. production of uncoated groundwood paper finally reached and exceeded the record formerly achieved in 1979, and in 1984 it seems headed to a new peak of more than 1.6 million short tons. Canadian production also seems likely to achieve a new record—almost 900,000 tons.

Canadian figures should be used only for annual comparisons, however, since Canadian Pulp & Paper Assn. numbers greatly distort actual levels of operation: U.S. government definitions of newsprint permit Canada to hide a substantial portion of its uncoated groundwood output within the newsprint category. Thus, while CPPA estimates 1984 capacity at 926,000 short tons, *P&P* believes a more accurate number would be 2.1 million tons.

Further complicating capacity figures is the question of swing machines. American Paper Institute's latest available capacity survey places U.S. capacity at 1.622 million tons for 1984, but *P&P* estimates actual capacity this year at closer to 1.733 million tons—partly because machines can be kept busier making uncoated groundwood than they can making newsprint. Also, in a busy market, extra capacity can sometimes be found simply by skimping on maintenance.

**OUTLOOK:** Recovery was fully under way in uncoated groundwood markets in 1984 and should continue through 1985 as well, barring a recession. By one estimate, U.S. imports from overseas may hit 300,000 tons this year without hurting North American mills at all. Virtually all major markets—Sunday supplements, catalogs, and inserts in particular—face tight paper supply situations, and even telephone directories are expected to resume consumption growth following several years of successful conservation efforts.




**Estimated capacities of major companies are:**

| | Annual capacity (000 short tons) | | Capacity N. American market | |
|---|---|---|---|---|
| | U.S. | Canada | Total | % |
| 1. Abitibi-Price | — | 500 | 500 | 13.1 |
| 2. CIP | — | 380 | 380 | 10.0 |
| 3. Great Northern Nekoosa | 380 | — | 380 | 10.0 |
| 4. Consolidated-Bathurst | — | 370 | 370 | 9.7 |
| 5. MacMillan Bloedel | — | 330 | 330 | 8.7 |
| 6. Boise Cascade | 40 | 260 | 300 | 7.9 |
| 7. St. Regis[1] | 220 | — | 220 | 5.8 |
| 8. Domtar | — | 210 | 210 | 5.5 |
| 9. Madison Paper Industries | 200 | — | 200 | 5.2 |
| 10. Fraser | 135 | — | 135 | 3.5 |
| 11. Crown Zellerbach | 130 | — | 130 | 3.4 |
| 12. Kimberly-Clark | 95 | 30 | 125 | 3.3 |
| 13. Bowater | 70 | — | 70 | 1.8 |
| 14. Pejepscot Paper[2] | 56 | — | 56 | 1.5 |

**North American capacity (1984): 3.813 million tons (U.S. 1.733; Canada 2.080)**
**Capacity share of top five companies: 51.4%**
**Capacity share of top ten companies: 79.3%**

1. Includes 34,000 tpy at Hennepin Paper Co.
2. Subsidiary of Hearst Corp.

**PRICING:** Prices returned to prerecession levels in 1983 and 1984, helped in part by coated paper mills' success at raising their quotes. List prices for some groundwood grades ($/short ton) are: 25-lb roto catalog—1974, $320; 1975, $320; 1976, $345; 1977, $405; 1978, $425; 1979, $468; 1980, $495; 1981, $551; 1982, $551; 1983, $600; third-quarter 1984, $680. 30-lb standard roto news—1978, $345; 1979, $386; 1980, $427; 1981, $490; 1982, $505; 1983, $505; third-quarter 1984, $520.



(News section continues on page 27)

SALES AND EARNINGS

## No end in sight to paper industry gains

Strong demand, rising prices, and high shipments continued to push up sales and earnings in the U.S. paper and forest products industry in the second quarter. Earnings of 34 companies surveyed by *Pulp & Paper* shot up 78%, to $1.0 billion, compared with the second quarter of 1983, while sales grew a healthy 24%, to $18.4 billion.

The rise in sales and earnings of the 27 paper companies surveyed was even more spectacular: sales were up 32% and earnings 88% compared with the 1983 period. Of the seven companies surveyed that primarily produce forest products, sales increased 11% and earnings 56%, with the performance of paper operations offsetting weakness in wood product prices.

**Second-quarter results of U.S. paper and forest products companies.**

| | Second quarter ($000) | | | |
|---|---|---|---|---|
| **Paper companies** | **Sales** | **Change 1984/83** | **Earnings[1]** | **Change 1984/83** |
| Bowater | $258,278 | 34.6% | $16,553 | 62.3% |
| Chesapeake | 84,386 | 33.5 | 6,100 | 155.3 |
| Consolidated | 175,987 | 23.5 | 20,657 | 72.1 |
| Crown Zellerbach | 776,400 | 19.0 | 32,500 | 62.5 |
| Federal Paper (6/16)[2] | 146,170 | 13.4 | 8,254 | 424.1 |
| Fort Howard | 357,208[3] | 143.7 | 35,028[4] | 39.4 |
| Glatfelter | 88,097 | 40.1 | 10,563 | 111.6 |
| GN Nekoosa | 477,300 | 22.5 | 35,100 | 61.8 |
| Hammermill | 453,384 | 26.1 | 16,965 | 185.1 |
| Int'l. Paper | 1,228,700 | 14.5 | 67,000 | 34.5[5] |
| James River (4/29)[2] | 2,301,076 | 38.9 | 97,995 | 77.7 |
| Jefferson Smurfit | 176,335 | 21.6 | 6,055 | 1,480.9 |
| Kimberly-Clark | 891,200 | 7.9 | 58,900 | 25.3 |
| Longview (4/30)[2] | 126,905 | 49.9 | 7,179 | 679.5 |
| Mead | 726,300 | 15.8 | 46,100 | 401.1 |
| Mosinee | 52,727 | 119.1 | 2,307 | 64.4 |
| Pentair | 143,283 | 94.0 | 5,993 | 113.3 |
| St. Regis | 815,146 | 16.5 | 39,402 | 278[6] |
| Scott | 637,816 | 3.9 | 52,862 | 60.0 |
| Sonoco | 189,643 | 12.2 | 12,102 | 89.3 |
| SW Forest | 209,603 | 28.4 | 5,562 | 2,874.3 |
| Stone Container | 313,913[3] | 142.1 | 9,446[3] | 500.9 |
| Temple-Inland | 329,400 | 9.5 | 28,800 | 148.3 |
| Union Camp | 507,682 | 20.9 | 51,331 | 64.8 |
| Wausau | 55,135 | 20.9 | 2,131 | 158.3 |
| Westvaco | 446,935 | 24.4 | 28,234 | 154.2 |
| Willamette | 304,083 | 11.0 | 16,753 | 238.2 |
| **Total** | **12,273,092** | **31.8** | **719,872** | **88.4** |
| **Forest products** | | | | |
| Boise Cascade | 998,730 | 14.9 | 33,520 | 97.5 |
| Champion Int'l. | 1,151,862 | 8.5 | 40,062 | 56.7 |
| Georgia-Pacific | 1,823,000 | 7.3 | 84,000 | 50.0 |
| Louis.-Pacific | 324,650 | 9.8 | 7,520 | −38.1 |
| Pope & Talbot | 78,602 | 0.4 | 2,627 | −41.1 |
| Potlatch | 258,605 | 13.8 | 15,930 | 60.8 |
| Weyerhaeuser | 1,471,297 | 14.8 | 103,872 | 75.7 |
| **Total** | **6,106,746** | **10.8** | **287,531** | **56.1** |
| **U.S. total** | **18,379,838** | **24.0** | **1,007,403** | **77.9** |

1. Income after taxes from continuing operations, excluding most significant nonrecurring items in both years.
2. Period ending.
3. 1984 figures include a major acquisition.
4. Includes a charge of $6,000,000 from the consolidation of facilities and write-offs of equipment and inventory.
5. Includes a pretax gain of $15,700,000 in the 1983 quarter from the sale of land.
6. 1983 figure includes a gain of $2,455,000 from sale of certain timberlands and a gain of $11,000,000 from sale of tax benefits.

"We continue to experience softness in the wood products side of our business," said Edwin A. Gee, chairman and CEO of International Paper Co. "Improvement in the other operating segments, however, has been consistent since third-quarter 1983. We are achieving our earnings projections and are optimistic this trend will continue." Dr. Gee said. IP's sales were up 15%, to $1.2 billion, and earnings rose 35%, to $67 million.

**White papers lead.** Coated papers did particularly well in the second quarter. Earnings of Consolidated Papers Inc., a major coated papers manufacturer, rose 72%, to $21 million, compared with the 1983 quarter. The second quarter for Mead Corp., also a major coated papers producer, was a record one for the company—the earnings of $46 million exceeded the 1983 quarter by 401%.

Containerboard was also very strong in the quarter. Stone Container Corp. registered a 501% increase in earnings on a 142% jump in sales, reflecting the acquisition of three large unbleached kraft mills and related converting operations from Continental Forest Industries Inc. last year. Results also benefitted from higher prices and shipments, noted Roger W. Stone, chairman and CEO.

Peter J. McLaughlin, chairman and CEO of Union Camp Corp., manufacturer of containerboard and white papers, said, "Looking ahead to the rest of the year, we see a continuation of the first half's strong performance. Not only do we see strong demand, but we also expect to realize further needed price improvement, particularly in linerboard and corrugated containers."

**Competitive tissue market.** Tissue demand was strong, but prices continued to be very competitive. "Business conditions within the industry have, for all practical purposes, remained unchanged, and we are still facing a highly competitive marketplace that is price sensitive," noted Paul J. Schierl, president and CEO of Fort Howard Paper Co. The company nevertheless posted a 39% increase in earnings on a 144% rise in sales (boosted by the acquisition of Maryland Cup Corp. in 1983).

Kimberly-Clark Corp. posted an 8% increase in sales on a 25% rise in earnings, while Scott Paper Co. recorded a 60% increase in earnings on a 4% rise in sales, showing improved operating efficiencies and a strong performance from its S.D. Warren Div. coated and uncoated printing papers.

**Wood products glut.** The only two decreases in earnings were by two forest products companies—Louisiana-Pacific Corp. and Pope & Talbot Inc.—down 38% and 41%, respectively."The anticipation of a strong housing market led to a major overreaction on the part of both U.S. wood products producers and their Canadian counterparts," said L-P chairman and president, Harry A. Merlo.

Champion International Inc.'s sales were up about 9%, to $1.152 billion, and earnings 57%, to $40 million. "Our paper business is excellent and packaging has improved significantly," said chairman and CEO, Andrew C. Sigler. "But the building products business is a real concern."

## Canadian results differ in East, West

Eastern Canadian paper companies surveyed by *Pulp & Paper* experienced strong second-quarter gains in sales and earnings, contrasting with western companies whose results were dragged down by weak lumber prices. For the 11 Canadian companies surveyed, sales were C$3.2 billion, up 11.4% from the second quarter of 1983, and earnings were C$882 million, compared with C$43.2 million in 1983.

Eastern Canadian companies' sales and earnings were boosted by healthier newsprint and kraft pulp markets and the strong U.S. dollar. Abitibi-Price Inc.'s sales jumped 31%, to $586.6 million, and earnings rose 74%, to $20.7 million, including a loss from the sale of Abitibi's Sault Ste. Marie, Ont., groundwood papers mill. According to Abitibi chairman and CEO, R.C. Gimlin, the results were due to growth in U.S. newsprint consumption, up more than 8% over 1983, and improvement in newsprint sales, including a surge in orders before the July 1 price increase to $535/ton.

"We look forward to good earnings for the balance of the year, particularly if, as predicted, the U.S. exchange rate remains near present levels," said Gimlin.

Consolidated-Bathurst Inc. attributed its increase in earnings—up 118.7% to $19.9 million—to better foreign exchange rates, higher shipments and increased prices in newsprint and groundwood specialties, improved margins in bleached pulp, and higher shipments of glass containers. Con-Bath's sales were up 19.9%, to $438.9 million.

The higher level of housing starts in the U.S. helped push Domtar Inc.'s sales up 16.1% compared with the 1983 quarter, to $522.5 million, and earnings up 172.2%, to $24.5 million. Sales of Domtar's construction materials group increased 39% due to strong demand in the U.S. for gypsum wallboard. Sales of the pulp and paper group rose 17%, excluding a business sold in 1983, primarily because of improved prices. The packaging group's sales increased 19% as a result of a higher sales volume of corrugated containers, improved prices, and better operating efficiencies.

**Canadian paper industry results.**

| | Second quarter (C$000) | | | |
|---|---|---|---|---|
| **Paper companies** | **Sales** | **Change 1984/83** | **Earnings[1]** | **Change 1984/83** |
| Abitibi | C$586,572 | 31.0% | C$20,666[2] | 74.0% |
| B.C. Forest | 262,700 | 9.7 | 5,400 | n.m. |
| Canfor | 271,700 | −5.2 | 200 | n.m. |
| Con-Bathurst | 438,900 | 19.9 | 19,900[3] | 118.7 |
| Domtar | 522,500 | 16.1 | 24,500 | 172.2 |
| Donohue | 119,000 | 30.5 | 7,500 | 400 |
| Fraser | 135,900 | 25.1 | 8,300 | 76.6 |
| Great Lakes | 157,052 | 21.1 | 4,410 | n.m. |
| Mac. Bloedel | 534,200 | −8.5 | 5,300 | −54.7 |
| Rolland | 70,528 | 25.4 | 2,326 | 51.3 |
| Weldwood | 147,987 | −5.4 | 785 | −88.5 |
| **Canadian total** | **3,247,039** | **11.4** | **882,002** | **n.m.** |

1. income after taxes from continuing operations, excluding most significant nonrecurring items in both years.
2. Includes $2,350,000 loss from sale of Sault Ste. Marie mill.
3. Before extraordinary credit of $10.9 million.

( ) = loss. n.m. = Not meaningful.

Domtar expects "continuity" of its financial results in the second half of 1984, said D.J. Speirs, v.p.-finance and corporate development. But results will be affected by the Canadian Paperworkers Union strike at Domtar's Lebel-sur-Quevillon, Que., mill, which has forced Domtar to buy pulp for its fine-paper operations from other suppliers.

**Hard times in the West.** Sales and earnings of the four paper companies surveyed in western Canada were held back by depressed wood product prices. MacMillan Bloedel Ltd.'s second-quarter sales of $534.2 million were down 8.5% from the 1983 quarter. Earnings fell 54.7%, to $5.3 million. Pulp, newsprint and containerboard markets continued to be favorable, said president and CEO, Ray Smith, but lumber markets deteriorated significantly.

Weldwood also suffered drops in sales and earnings compared with the second quarter of 1983. Sales fell 5.4%, to $148 million, and earnings dropped 88.5%, to $800,000. Canadian Forest Products Ltd. recorded sales of $271.7 million, down 5.2%, and earnings of $200,000, compared with a loss of $700,000 in the 1983 quarter.

Westar Timber Ltd., a subsidiary of British Columbia Resources Investment Corp., reported a second-quarter 1984 loss of $1.7 million, down from earnings of $300,000 in the 1983 quarter. Extremely low lumber prices caused the company to close five of its six lumber mills late in the second quarter. Nevertheless, "the improved pulp picture has allowed Westar Timber to break even in June and it should be profitable for the balance of the year," said Bruce Howe, president and CEO of BC Resources.

British Columbia Forest Products Ltd. was able to raise sales 9.7%, to $262.7 million, due to improved market conditions for kraft pulp and newsprint. Earnings were $5.4 million, compared with a loss of $4.5 million in 1983.

"Operations for the third quarter are expected to be similar to the second quarter with contrasting market conditions for pulp and paper and wood products. No further downtime is expected for pulp or newsprint production, but some curtailments could occur in the face of the depressed market conditions for wood products," said president and CEO, Kenneth P. Benson, and chairman, Ian A. Barclay.

EXPANSION

## Domtar to install new Trenton machine

Domtar Inc. plans to install a new corrugating medium machine in a C$35-million modernization of its Trenton, Ont., mill, the company announced.

The new machine will replace an existing 115-in.-trim machine and boost capacity of the mill from 195 metric tpd to 350 tpd. Initial production will be targeted at 280 tpd when the machine begins operation in early 1986. A purchase order for the new machine has not been signed, according to a company spokesman.

The mill's 136-tpd semichemical pulp line will also be modernized with a new evaporator plant, which will be part of a treatment facility to improve mill effluent and paper quality. Capability to recycle old corrugated boxes will be modernized and expanded to meet increased production.

## Manville to upgrade two machines

Manville Forest Products Corp. has announced plans to spend $24 million over the next several months for modifications to its two coated kraft paperboard machines at West Monroe, La. The work will improve graphic reproduction quality of the board produced by the two machines and significantly improve productivity of the mill. Completion is scheduled for the spring of 1985.

Nos. 6 and 7 machines have a combined capacity of about 1,150 tpd of coated kraft board used for folding cartons and beverage carriers.

## Georgia-Pacific will install uncoated free-sheet machine at Port Hudson mill

Georgia-Pacific Corp. will install a new 650-tpd uncoated free-sheet machine at its Port Hudson, La., market pulp mill, with startup scheduled for the third quarter of 1986. Preliminary engineering has been started. The new unit, plus related work, will cost G-P about $200 million.

In addition to bringing online a new paper machine, the company plans to increase the mill's bleached hardwood pulp capacity by about 35,000 tpy from its present 240,000-tpy level. The mill also has capacity to produce 210,000 tpy of bleached softwood kraft pulp.

Grades to be produced by the machine will include forms bond, offset, and other printing papers. G-P chairman, T. Marshall Hahn Jr., said that this decision "reflects two aspects of our corporate strategy: increasing the size of our paper business to balance our large building products business and the manufacture of higher-value-added products."

G-P thus becomes the latest in a long list of producers to install or plan new uncoated free-sheet machines. Six of the top ten producers in the U.S. uncoated free-sheet industry—Champion International Corp., International Paper Co., Hammermill Paper Co., Union Camp Corp., G-P, and Weyerhaeuser Co.—have started up a machine or conversion, have announced a machine, or have discussed a possible machine for the period 1983-89. Canada is also undergoing a massive capacity buildup, led by industry leaders Island Paper Mills, Great Lakes Forest Products Ltd. and Domtar Inc., with part of that output targeted for the U.S.

**New coated free-sheet capacity at North American mills.**

| Company–U.S. | Location | Capacity (short tpy) | Year |
|---|---|---|---|
| Champion | Courtland, Ala. | 150,000 | 1983 |
| Crown Zellerbach | Camas, Wash. | 160,000 | 1984 |
| Georgia-Pacific[1] | Crossett, Ark. | 100,000 | 1984 |
| Westvaco[1] | Wickliffe, Ky. | 35,000 | 1984 |
| Union Camp | Eastover, S.C. | 215,000 | 1984 |
| International Paper[1] | Mobile, Ala. | 350,000 | 1985 |
| Georgia-Pacific[1] | Crossett, Ark. | 50,000 | 1985 |
| Georgia-Pacific | Port Hudson, La. | 230,000 | 1986 |
| Weyerhaeuser[2] | Columbus, Miss. | 200,000 | n.a. |
| Hammermill Paper[2] | Selma, Ala. | n.a. | n.a. |
| **Company-Canada** | | | |
| Island Paper Mills | New Westminster, B.C. | 77,000 | 1983 |
| Great Lakes Forest | Dryden, Ont. | 135,000 | 1984 |
| Domtar[3] | Windsor, Que. | 176,000 | 1986 |
| Domtar | Windsor, Que. | 176,000 | 1989 |

**North American capacities, 1984**
U.S.: 9.554 million short tpy
Canada: 1.232 million short tpy

n.a. = Not available or not applicable.
1. Machine conversion or modernization.
2. Machine announced or discussed in principle but plans not finalized.
3. During 1986-89 period Domtar will also be shutting down 97,000 tpy of old machines.

Source: *Pulp & Paper* estimates, American Paper Institute, Canadian Pulp & Paper Assn.

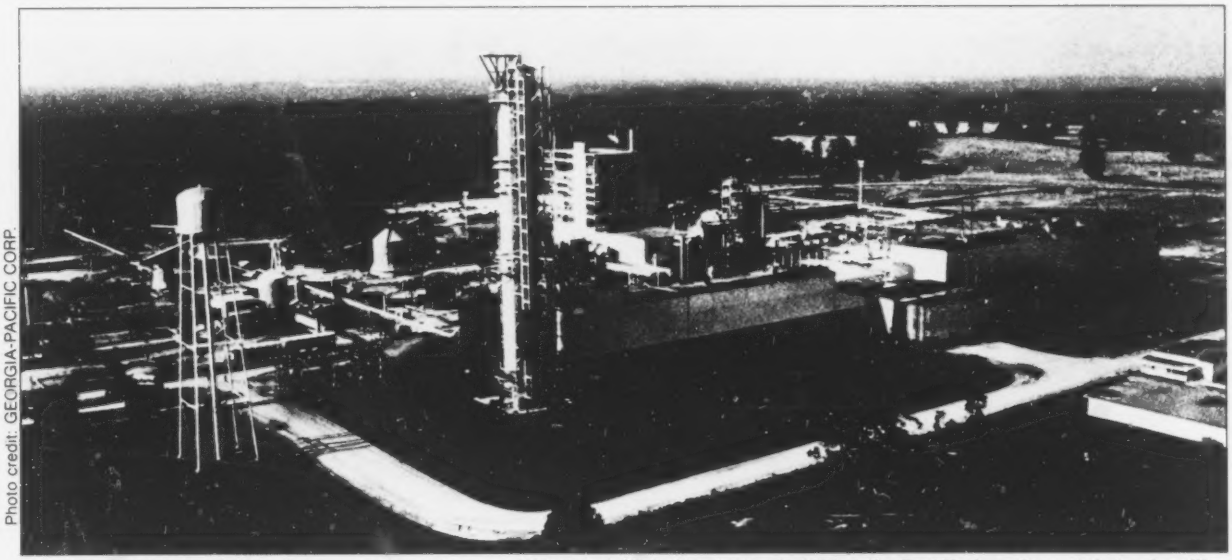


Photo credit: GEORGIA-PACIFIC CORP.

**Georgia-Pacific's new 650-tpd uncoated free-sheet machine is scheduled to startup in 1986 at the Port Hudson, La., market pulp mill.**

## James River approves Naheola machine

James River Corp. recently approved a $120-million project which includes installation of a 70,000-tpy tissue machine at its Naheola, Ala., mill and expansion of pulp capacity by a similar amount (*P&P*, May, p. 33). The Beloit twin-wire machine will have a wire width of about 260 in. and a design speed of 6,000 fpm. It will produce lightweight tissue which will be converted into the company's two-ply Northern bathroom tissue. Converting facilities at the mill will be modernized and expanded. Completion is scheduled for mid-1986.

Naheola currently has four 192-in.-wide Beloit yankee fourdrinier tissue machines with a combined capacity of 160,000 tpy. The mill also has two bleached board machines with a total capacity of approximately 200,000 tpy. Two of the tissue machines and the largest bleached board machine were recently rebuilt. The rebuild of the 236-in.-wide No. 3 bleached board machine included new coating and calendering equipment for production of board suitable for rotogravure and multicolored lithography, the company said.

When the new tissue machine comes online, production on the existing four tissue machines will be shifted around so that the roughly 65%/35% balance between the company's consumer and commercial tissue does not significantly change. There has been concern about overexpansion in the commercial segment of the tissue market, with Fort Howard Paper Co. bringing on two new machines and Crown Zellerbach installing another.

Last week James River said that expenses connected with introduction of its premium branded towel and tissue products into northeast markets would "have a temporary, adverse effect on earnings." James River entered the northeast market last year and became a national producer through the purchase of Diamond International Corp.'s 60,000-tpy tissue mill at Old Town, Maine. The company has been reconfiguring the facility to meet its quality requirements and improve efficiency.

**New tissue machines announced or proposed for the North American market.**

| Company | Mill location | Capacity (000 tpy) | Startup date |
|---|---|---|---|
| Scott Paper Ltd. | N. Westminster, B.C. | 36 | 1984 |
| Cascades Paper | Rockingham, N.C. | 17 | 1984 |
| Fort Howard | Green Bay, Wis. | 88[1] | 1984 |
| Crown Zellerbach | S. Glens Falls, N.Y. | 42 | 1985 |
| Little Rapids | Potsdam, N.Y. | 50[2] | 1986 |
| Fort Howard | Muskogee, Okla. | 80[3] | 1986 |
| James River | Naheola, Ala. | 70 | 1986 |
| **Proposed** | | | |
| Wisconsin Tissue | Menasha, Wis. | n.a. | n.a. |
| Crown Zellerbach | Southern site (possibly Bogalusa, La.) | n.a. | n.a. |
| Tagsons Paper | Mechanicville, N.Y. | 14 | n.a. |

n.a. = Not available
1. Undetermined amount of existing capacity at Green Bay will be shut down.
2. Idle tissue machine acquired from Kimberly-Clark Corp.'s Kapuskasing, Ont., mill.
3. Estimated capacity.

The new product introductions in the Northeast and selected mid-Atlantic markets included extensive consumer testing and heavy television advertising and promotional activity. Brands involved included Northern bathroom tissue (the No. 2 selling domestic brand), and Northern Napkins and Brawny towels.

Meanwhile, James River has approved a $15-million project to double the capacity of the company's Iowa City, Iowa, release paper converting plant. The plant was one of two H.P. Smith Paper Co. plants purchased last year from Phillips Petroleum Co.

## Consolidated approves LWC machine

Consolidated Papers Inc. won board approval to install a new coated groundwood paper machine "subject to obtaining environmental approvals and final engineering studies," a company announcement said.

A spokeswoman would not elaborate on the terse press release. Industry sources indicate the machine will be installed at the Biron Div. mill at Wisconsin Rapids, Wis., or the Stevens Point Div. at Stevens Point, Wis., with startup in 1987. It is expected to be about the same size as the 170,000-tpy lightweight coated machine St. Regis Corp. installed at Sartell, Minn., in 1982, and to produce about the same basis weights of No. 5 coated—lightweight paper, between 30 lb and 32 lb on the low end and 40 lb to 45 lb on the high end.

Fiber supply should not be a problem for the expansion since Consolidated announced July 19 it will not reopen its Newaygo Forest Products Ltd. sawmill in Mead, Ont., freeing up the 358,000 acres of timberland that has "been the chief source of raw material for the [saw]mill."

That sawmill was shut down in February by a strike, and the company decided to make the closure permanent when negotiations didn't progress. A company announcement commented that the timberland is "a valuable pulpwood resource that can serve the company well in the future."

Operating on a one-shift basis, the sawmill had capacity to produce 25 million bd ft of dimension lumber and 42,000 tpy of chips, which were consumed at the company's Appleton, Wis., sulfite pulp mill. When Appleton shut down in 1982, the chips went to the Wisconsin River Div. in Whiting, Wis. Now with no sawmill to supply, the company will presumably be able to make use of the balance of the Newaygo fiber to help out with the coated groundwood expansion.

Industry executives are beginning to worry about a possible glut of capacity in 1987, with Consolidated and Bowater having announced machines, and with machines under study—or believed to be under study—by International Paper Co. at Pine Bluff, Ark., Blandin Paper Co. at Grand Rapids, Minn., St. Regis (probably at Sartell), Kruger Inc. at Trois Rivières, Que. (just 70,000 tpy), and one other Canadian company, a market pulp producer. Also, Nitec Corp.'s 80,000-tpy mill in Niagara Falls, N.Y., is expected to reopen in the first quarter of 1985.

The coated paper market continues to astound observers with its health, however. Shipments of coated No. 5 were up 15% through May, one executive estimates, while No. 4 shot up by 28%.

MARKET REPORT

# AFTER PULP MARKET'S DRAMATIC FIRST-HALF JUMP—WHAT'S NEXT?

## Pulp prices rose by about $100/ton in the first half, but the British Columbia lockout was the major cause

■ The pulp market strengthened dramatically in the first half of 1984, with the price of benchmark northern bleached softwood kraft jumping from $440/metric ton ($450 in the U.S.) at the end of 1983 to $540 by the beginning of the second quarter. North American and Scandinavian producer inventories, which hovered around 1.5 to 1.6 million metric tons through most of 1983, had dropped to almost 900,000 tons by the end of March and were still at only 1.03 million tons at the end of June.

The dramatic turnaround, however, was due in large measure to the six-week British Columbia pulp mill lockout, which resulted in an estimated potential production loss of more than 600,000 tons. Now the question is: will pulp producers be able to hold prices close to current list levels and perhaps try for another price increase in the fourth quarter of 1984?

Shipments of Norscan chemical paper-grade pulp jumped an unprecedented 19% in 1983, but part of that went into customer inventories built up in anticipation of price increases and a possible strike. For the first half of this year, shipments were up only a modest 2.8% as customers worked down their inventories.

Shipments may show somewhat greater strength in the second half of this year as customers' orders more closely match actual consumption. But the pace of the U.S. economic recovery is cooling, and Europe is only expected to continue to show gradual economic growth.

**CURRENCY GYRATIONS.** Another problem for the pulp market in the second half is the continuing strength of the U.S. dollar over most world currencies. The strong dollar has the effect of making pulp more expensive for buyers in terms of their local currencies and has greatly improved the competitive position of Scandinavian (particularly Swedish) and nontraditional producers (Brazil).

During the summer lull in Europe, agents report more discounting and some easing in payment terms. One form the price cutting is taking is increased sales in producer (krona) or local currencies (D-mark, lira, franc) which translated into dollar terms would be considerably below current list.

There is also significant new market pulp capacity coming onstream in the second half of this year. In North America, Leaf River Forest Products will be starting up its 335,000-tpy bleached kraft softwood/hardwood mill at New Augusta, Miss., in September, while International Paper Co. will be bringing on 320,000 tpy of bleached softwood kraft at its reconfigured Georgetown, S.C., mill this fall. Westar Timber also recently reactivated the 135,000-tpy B Mill at its Prince Rupert, B.C., complex, which had been idle since late 1982.

In Europe, Soporcel (Soc. Portuguesa de Celulose) has started production at its new 300,000-tpy bleached kraft eucalyptus pulp mill in Portugal, while a 200,000-tpy bleached sulfite market pulp mill has come online in Paskov, Czechoslovakia. In addition, a 200,000-tpy kraft pulp mill is scheduled to start up later this year at Pöls, Austria.

**FAVORABLE BALANCE.** Beyond the current capacity bulge, however, the supply/demand balance for chemical paper-grade market pulp looks favorable. Norscan capacity is forecast to rise only 4% over the entire 1983-86 period to 18.6 million tons, with the most growth in the U.S. and a slight capacity decline in Scandinavia due

to forward integration into higher value added paper production.

The poor profit performance for market pulp in recent years may also be causing some forward integration in the U.S. Georgia-Pacific Corp. recently approved a new uncoated free-sheet machine for its Port Hudson, La., mill and Hammermill Paper Co. and Champion International Corp. are also considering machines at market pulp mills. Such projects would pull a significant amount of pulp from the market in a few years.

The Norscan producers statistical committee has estimated chemical paper-grade market pulp shipments will rise 4.5% in 1984 to 16.6 million tons and then remain level in 1985. This would result in shipments-to-capacity ratios of 93.3% in 1984 and 91.0% in 1985—up from 89.5% in 1983 and 75.6% in 1982.

Such operating rates would enable producers to push through some further price increases, especially if there was any weakening in the U.S. dollar. Data Resources Inc. is projecting an average NBSK price for 1986 of $700/ton, up from the present level of $540. Somewhat more pessimistic is Vancouver newsletter publisher Ross Hay-Roe, who says "pulp prices are not likley to exceed $650 in this cycle—say by late 1985." ■

*—Will Mies, Executive News Editor*

*TABLE 1:* **Estimated North American and Scandinavian capacity, potential production and demand (000 metric tons).**

| | 1982 | 1983 | 1984 | 1985 |
|---|---|---|---|---|
| Capacity | 17,640 | 17,770 | 17,815 | 18,255 |
| Potential production[1] | 16,760 | 16,880 | 16,340[2] | 17,340 |
| Demand | 13,335 | 15,905 | 16,620 | 16,610 |
| Demand/capacity | 76% | 90% | 93% | 91% |
| Demand/potential production | 80% | 94% | 102% | 96% |

1. Potential production = 95% of capacity.
2. Partially adjusted for British Columbia strike production loss.
Source: American Paper Institute.

*TABLE 2:* **Estimated 1984 average costs for producing bleached kraft market pulp at existing mill ($/a.d. metric ton).**

| | Softwood | | | Hardwood |
|---|---|---|---|---|
| | Western Canada | Sweden | U.S. South | Brazil |
| Fiber | $109 | $184 | $120 | $55 |
| Chemicals | 41 | 31 | 50 | 20 |
| Energy | 36 | 12 | 45 | 15 |
| Wages/salaries | 49 | 35 | 60 | 27 |
| Other | 42 | 27 | 60 | 40 |
| **Total[1]** | **277** | **289** | **335** | **157** |

1. Excluding interest, depreciation and delivery costs.
Source: Fred Robertson, Mead Pulp Sales Inc.

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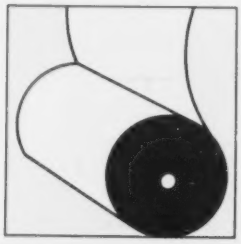

MARKET REPORT

# STRONG BOX DEMAND BOOSTS RECOVERY IN CONTAINERBOARD

## Moderate capacity expansion makes outlook bright for 1985—if economy sustains growth, even at slower rate

■ Corrugated container shipments have begun to drop off from their superheated pace earlier this year, reflecting a general slowing in the U.S. economic growth to a more sustainable pace. Box shipments in June were only 1.7% ahead of a year ago compared with a 9.1% rise for the entire first half, according to the Fibre Box Assn.

The slowing probably reflects some reduction of packaged goods inventories built up in distribution channels throughout the economy earlier this year. Once this is accomplished, box shipments will probably pick up this fall and more closely match actual consumption. Most analysts look for about a 7% jump in box shipments for all of this year.

**RISING PRICES.** This is good news for containerboard producers whose operating rates this year are likely to average about 96% to 97% vs about 91% last year and about 84% in 1982. Containerboard prices have been rising from their recession lows, with 42-lb linerboard up from a low of $250/short ton in late 1982 and early 1983 to $320/ton by February 1984 and with producers trying for a $30/ton hike in late summer. (Semichemical medium prices for 26 lb are $10/ton lower.)

The only weak area this year has been in U.S. linerboard exports, where the strong U.S. dollar has held back prices and made U.S. producers less competitive. Lower mill net on export sales has diverted home some tonnage, adding to domestic supply. U.S. export shipments in the first half were down 10% from a year ago.

Depressed prices during the recession caused most producers to run in the red, with the break-even price for an average linerboard mill estimated at about $280 to $290/ton. Heavy financial losses suffered by the industry in 1982-83 have discouraged new capacity expansion. Linerboard capacity is expected to rise at only a 1.8% annual rate over the 1984-86 period and semichemical medium at an even slower pace.

Actual growth in liner capacity, however, could turn out to be somewhat faster due to installation of new high-pressure loading presses, such as the Extended Nip, and the swing of some machines from kraft paper. Kraft paper has been under competitive pressure from plastic film, particularly in the grocery sack market where some forecasters say plastic bags could capture 25% of the market over the next few years.

**LIMITED EXPANSION.** The rate of corrugating medium capacity expansion is somewhat more predictable. However, reactivation of some less-efficient machines closed in the recession (Packaging Corp. of America, Filer City, Mich.; and Manville Forest Products, West Monroe, La.) may cause faster-than-expected growth.

Only one new kraft linerboard machine has been announced, a new 315,000-tpy machine at Chesapeake Corp.'s West Point, Va., mill for startup in late 1985. Owens-Illinois has been studying a new semichemical medium machine at its Tomahawk, Wis., mill to replace an existing machine which would result in about a 247,000-tpy capacity gain if approved. The only other machine that has been announced is at Temple-Inland Inc.'s new 175,000-tpy recycled linerboard mill east of Los Angeles (see interview p. 186).

Assuming slower 2.5% to 3% economic growth next year, operating rates for linerboard and semichemical medium are likely to reach 98% to 99%, according to most forecasters. Analyst Thomas P. Clephane of Mor-

gan Stanley & Co., however, now looks for only one linerboard price hike in 1985 (in March), resulting in an average price of $375 next year vs $328 this year.

The improvement in pricing levels should result in a major recovery in profitability. But the roller coaster performance of the unbleached kraft segment in recent years plus the attractiveness of buying rather than building additional capacity is causing a major reshuffling of assets. Some companies are opting out of the brown fiber business and divesting their mills, while others are increasing their commitment.

Stone Container Corp., for example, doubled in size by acquiring Continental Forest Industries' unbleached kraft mills and related converting operations last year, and Georgia-Pacific Corp. recently completed the purchase of St. Regis Corp.'s Monticello, Miss., linerboard mill and U.S. box plants.

Jefferson Smurfit Ltd. several years ago completed the takeover of Alton Packaging Corp. and recently made an unsuccessful bid for Southwest Forest Industries. And there is speculation that Champion International Corp., a firm more enamored with the white paper side of the business, will sell off some more of St. Regis's containerboard or kraft paper assets once its takeover of St. Regis is complete. Where it will end nobody knows, but the industry will certainly have a different shape. ■

***— Will Mies, Executive News Editor***

*(Many of the issues mentioned above will be covered in P&P's "First International Unbleached Kraft Conference," Nov. 12-13, 1984, at the Vista International Hotel in New York, N.Y. For information, call or telex: Pulp & Paper, Symposium Dept., 370 Lexington Ave., New York, N.Y. 10017. Telephone (212) 683-9294; Telex 220442.)*

*TABLE 1:* **U.S. containerboard industry forecast.**

| | 1982 | 1983 | 1984e |
|---|---|---|---|
| **Box shipments** | | | |
| (billion ft²) | 235.2 | 252.5 | 270.2 |
| % change | −4.5% | +7.4% | +7.0% |
| **Linerboard** | | | |
| (000 tons) | | | |
| Production | 13,494 | 15,001 | 15,950 |
| Exports | 1,819 | 2,094 | 1,900 |
| Capacity[1] | 16,032 | 16,266 | 16,430 |
| Utilization rate (%) | 84.2% | 92.2% | 97.1% |
| Average price (42-lb) | $269 | $273 | $328 |
| **Corrugating medium** | | | |
| (000 tons) | | | |
| Semichemical | 4,389 | 4,731 | 5,025 |
| Recycled | 1,156 | 1,302 | 1,430 |
| Total | 5,545 | 6,033 | 6,455 |
| Capacity[1] | | | |
| Semichemical | 5,207 | 5,156 | 5,218 |
| Recycled | 1,478 | 1,555 | 1,582 |
| Utilization rates (%) | | | |
| Semichemical | 84.3% | 91.8% | 96.3% |
| Recycled | 78.2% | 83.7% | 90.4% |
| Average price | | | |
| (26-lb semichemical) | $259 | $263 | $318 |

1. Based on 1983 American Paper Institute capacity survey figures.
Source: API, Dept. of Commerce (exports), *Pulp & Paper Price-Book.*


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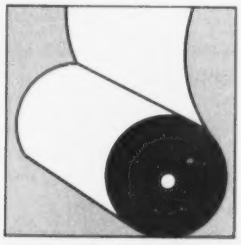

MARKET REPORT

# UNCOATED FREE SHEET WEAKENS AFTER STELLAR PERFORMANCE

## Bulge of new capacity, inexpensive imports, and high inventories cause concern about 1984-85 outlook

■ In the wake of a failed attempt to raise third-quarter prices, uncoated free-sheet mills have begun taking stock of the industry's outlook for the rest of the year—and there seems to be little reason for celebration. A healthy fourth quarter is expected after a soft summer, but no return to the tightness of late last year is thought likely.

That picture seems confounded by industry statistics, say industry analysts. Operating rates through May were averaging 95.1% and for the month of May were a respectable 94.1%, according to one executive's estimate. But backlogs and operating rates began dropping after that, he added, and July, at least, seemed likely to be a worse month than July 1983.

Darkening the picture also was the profusion of offers from foreign mills of imported paper, priced several points below the market in the case of some continental European and Finnish paper and 15% to 20% off for Brazilian paper. For the first five months of the year, U.S. customers had imported 184,000 short tons of uncoated free sheet, representing the equivalent about 6.7 days of production by the U.S. industry. For the same period last year, imports were just 52,000 tons, despite frequent complaints of unreliable delivery timing and quality from imported paper, particularly Latin American paper.

**IMPORTS HURT PRICING.** While imports were becoming an important factor in tonnage terms, they also hurt the U.S. industry in pricing. The July 1 uncoated free-sheet price hikes that were abandoned by producers of forms bond and offset papers would have undoubtedly had at least a slightly better chance if 15-lb Brazilian forms bond were not readily available at $680/ton, compared with a U.S. market average of $795.

A more important factor, however, was the presence of significant inventories of forms bond and cut-size, and the imminence of traditionally slow summer demand. Most observers believe July was simply a bad time to try a price increase, and some think the fourth quarter may work better.

Not all feel that is the case, however. Some producers and consumers bet that a price hike won't stick before Jan. 1, although they concede that the robust U.S. economy could surprise everybody with a continuation of rapid first-half gross national product growth rates.

Business hasn't been at all bad for uncoated free-sheet mills this year. Through May, one executive estimates, while overall shipments of uncoated free sheet were 8.1% ahead of the first five months of last year, forms bond was 13.3% ahead and carbonless was up 12.8%. Offset rolls were 12% ahead of the year-earlier pace and offset sheets rose by just over 12%. White envelope stock was booming, with an increase of 18.5%.

The difficulty of interpreting those data was shown, however, by the fact that he estimates tablet stock shipments plummeted by 34% through May and bond and writing totals were up only 2.9%. Some of the drop in tablet

*TABLE 1:* **Uncoated free-sheet shipments to major end users, first five months of 1984 (000 short tons).**

| End-use | Tons(e) | % change from Jan.-May 1983 |
|---|---|---|
| Book publishing | 210 | 20% |
| Business forms | 965 | 10 |
| Commercial printing | 990 | 13 |
| Copy paper | 720 | 4.5 |
| Envelopes | 445 | 16.5 |
| Stationery and tablet | 130 | −30 |

e = Estimate.
Source: *Pulp & Paper estimates.*

may have been influenced by imports of converted tablets from Brazil, but much may also be caused by a statistical aberration since some machines make tablet, envelope, forms bond and offset interchangeably.

**FALLING ORDER BACKLOGS.** The overall picture is a very healthy one. But another executive believes order backlogs industry-wide fell by two days, to just 15 days, between mid-June and early July. At the end of 1983, by contrast, backlogs were at 22 days.

He also points out that business sometimes shifts between grades. For example, while forms bond shipments rose 13% through May, he estimates shipments of uncoated free sheet to forms converters were up just 10%.

Also, while the forms business seemed to be growing in the double digits—even if barely—the groundwood forms sector was flat or expanding just marginally. U.S. shipments of groundwood forms were virtually unchanged, but Canadian shipments are believed to be up.

But one customer said groundwood forms have not yet recovered from the price situation of 1982-83, when free-sheet forms prices on the spot market actually dipped below groundwood forms for a time. That brought some groundwood customers back to free sheet even though free-sheet prices have rebounded since then, he said—and groundwood mills will have to work hard to win that business back.

Meanwhile, industry executives were worrying about an apparent bulge in capacity that is now beginning to appear. With Union Camp Corp.'s 215,000-tpy Eastover, S.C., mill now starting up, all eyes were focused on how that company would fit into the market situation.

But Eastover is by no means the only new capacity online between 1984 and 1986. Other additions this year include Crown Zellerbach Corp.'s new 160,000-tpy machine at Camas, Wash., conversions at Georgia-Pacific Corp.'s Crossett, Ark., mill, adding 100,000 tpy, and improvements at Westvaco Corp.'s Wickliffe, Ky., mill, adding 40,000 tpy. Then next year International Paper Co. will add 350,000 tpy through conversions at its Mobile, Ala., mill and G-P will add 50,000 tpy the same way at Crossett. Finally, in 1986, G-P will start up a 140,000-tpy machine at Port Hudson, La.

Ignoring machine shutdowns, those upgrades and startups total more than 1 million tons of new capacity—a huge lump for the market to digest in two years. And that doesn't even count rebuilds at IP's Georgetown, S.C., mill and a new machine at Champion International Corp.'s Courtland, Ala., mill in 1983. ■

*—David R. Allan, Associate Editor*


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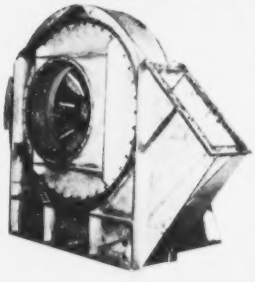

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# Soda ash production increasing as exports soar

By BARRY SHOCKETT

U.S. soda ash production reached the 8.5-million-ton level in 1983, mainly because exports were up more than 47%. Export growth has continued in 1984, with 458,000 tons being reported by the end of March.

In 1983, the Anti-Dumping Tribunal ruled that all trona exported to eastern Canada was subject to antidumping duties. Kerr-McGee withdrew from that market in November.

**U.S. statistics, sodium carbonate** (000 short tons)

| | 1980 | 1981 | 1982 | 1983e |
|---|---|---|---|---|
| Capacity | 9,620 | 10,360 | 10,540 | 11,360 |
| Production | 8,275 | 8,281 | 7,819 | 8,467 |
| Imports | 18.3 | 11.8 | 18 | 20 |
| Exports | 1,094 | 1,050.5 | 1,108.5 | 1,636 |
| Apparent consumption[1] | 7,131.5 | 7,146.5 | 6,667 | 6,868 |
| Glass[2] | 3,780 | 3,790 | 3,538.5 | 3,450 |
| Chemicals | 1,426.5 | 1,420 | 1,300 | 1,400 |
| Pulping | 250 | 250 | 223.5 | 200 |
| Other[3] | 1,675 | 1,718 | 1,605 | 1,818 |

1. Includes inventory adjustments. e = Estimated.
2. Including containers, sheet, and fibers.
3. Including water treatment, detergents, and miscellaneous.
Sources: U.S. Bureau of Mines, Bureau of Census, U.S. Dept. of Commerce.

**Canadian statistics, sodium carbonate** (000 short tons)

| | 1980 | 1981 | 1982 | 1983e |
|---|---|---|---|---|
| Capacity | 441 | 441 | 441 | 441 |
| Production | 423 | 419 | 419 | 424.5 |
| Imports | 178 | 153 | 134.5 | 139 |
| Exports | 18 | 11.8 | 18 | 20 |
| Apparent consumption[1] | 566 | 589 | 530 | 549.5 |
| Glass, including fibers | 346 | 361.5 | 321.5 | 337.5 |
| Chemicals | 87 | 89 | 88.5 | 90.5 |
| Pulping | 18.5 | 22.5 | 21 | 22.5 |
| Miscellaneous[2] | 114.5 | 116 | 99 | 99 |

1. Includes inventory changes. e = Estimated.
2. Including mining, smelting, detergents, cleaners, and water treatment.

## SODIUM CARBONATE

### UNITED STATES

**Uses:** The primary use of soda ash in the pulp and paper industry is in sulfite liquor preparation. Kraft mills also employ sodium carbonate for makeup liquor. The largest application is in the glass industry, followed by chemical manufacturing, detergents, and water treatment.

**Demand:** Pulp mill soda demand last year dropped to about 200,000 tons, off 10.5% from the 223,500-ton consumption estimated in 1982. Glass industry use was also down in 1983 to about 3.45 million tons from 3.54 million tons in 1982. Total demand was 6.9 million tons, compared with 6.7 million tons in 1982.

**Sources:** The six U.S. natural soda ash producers are Allied Chemical, FMC, Stauffer Chemical, Tenneco, and Texasgulf in Wyoming, while Kerr-McGee mines its trona in California. Allied operates the sole synthetic plant (Solvay Process) at Syracuse, N.Y.

**Availability:** Despite the big jump in soda ash exports last year, the increase in capacity to more than 11 million tpy ensures sufficient soda ash supply for several years. 1983, market; 1982, market; 1981, market; 1980, market; 1979, market.

**Pricing:** Unchanged since November 1982, the list for natural soda ash was boosted $6/ton to the $90/ton level on July 1. However, an $11/ton TVA has been in effect since late February—a $4/ton reduction from the $15/ton discount introduced last October. Synthetic sodium carbonate is still being listed at $132/ton. Price history: natural, 1983, $84/ton, f.o.b. Green River; 1982, $84-$92/ton; 1981, $86-$92/ton; 1980, $76-$86/ton; 1979, $61-$66/ton. Price history: synthetic, 1983, $132/ton, f.o.b. Syracuse, N.Y.; 1982, $132/ton; 1981, $126-$132/ton; 1980, $113-$123/ton; 1979, $96-$101/ton.

**Forecast:** Pulp mill usage of soda ash in 1984 is predicted to increase by about 10,000 tons. The continued improvement in exports (a 12% boost is expected in 1984) may result in more price firming in the second half of the year, either by reduced discounting or another list-price hike.

### CANADA

**Uses:** Sulfite mills use sodium carbonate to prepare cooking liquor while kraft mills employ it to supplement caustic in their makeup liquor. Other end uses include glass, chemicals, mining, detergents, and water treatment.

**Demand:** In 1983, pulp mill usage of soda ash returned to the 1981 level of 22,500 tons, an estimated 7% increase over 1982. All end-use areas experienced increased consumption, but only chemical manufacturing's usage exceeded the peak year of 1981.

**Sources:** Allied Chemical is the sole domestic producer, and it makes synthetic ash in Ontario. It supplies its customers in western Canada with trona imported from its parent company in the U.S.

**Availability:** Canadian demand surpasses capacity but U.S. imports make up the shortfall. 1983, market; 1982, market; 1981, market; 1980, market; 1979, market.

**Pricing:** Price firming south of the border was reflected in a boost in domestic list prices by about $5.50/ton to $188.70/ton, effective July 15. The $183/ton price tag had been in effect since July 1981. Price history: 1983, $183/ton, bulk, f.o.b. Amherstburg; 1982, $183/ton; 1981, $168-$183/ton; 1980, $145-$160/ton; 1979, $108-$128/ton.

**Forecast:** No further price hikes are expected for the balance of 1984. Pulp mill usage is predicted to increase by about 3,500 tons in 1984, but the mills expect to remain at the 26,000-ton level for at least the next four years.

*Mr. Shockett is consulting editor-chemical markets for* Pulp & Paper.